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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/900,639

07/06/2001

Viswanathan Subramanian

DP-305012

7581

7590

10/21/2003

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,639

Applicant(s)

SUBRAMANIAN ET AL.

Examiner

Eric S. McCall

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,22-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,22-25, and 27-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

THREADLESS KNOCK SENSOR

FINAL OFFICE ACTION

In response to the Applicant's amendment (paper no. 5) dated Aug. 06, 2003.

ABSTRACT

In response to the Applicant's amendment, the objection to the abstract as listed in the last office action (7/21/03) has been overcome.

CLAIMS

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-10, 24, 25, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Brammer et al. (6,279,381).

With regards to claim 1, Brammer et al. teach a threadless knock sensor (fig. 1), comprising:

a sleeve (2);

a transducer (6) disposed around the sleeve (col. 1, lines 27-31);

a load washer (4) disposed around the sleeve adjacent to the transducer;

a frusto-conical disk spring (5 & 7) disposed around the sleeve adjacent to the load washer (col. 2, lines 57-59); and

a threadless means (flared end of sleeve 2, ring 9, and mass 8) for compressing the disk spring against the load washer (the prior art teaches that ring 9 can be attached to sleeve 2 by a threadless means, col. 2, lines 31-34, wherein ring 9 keeps mass 8 in place and thus compresses the disk spring against the load washer), wherein the threadless means comprises: a flared end formed by the sleeve (fig. 1 shows the upper portion of the sleeve 2 as having a flared end which has ring 9 attached thereto) above the load washer (4), the disk spring (5/7) being installed in compression between the flared end of the sleeve and the load washer (the prior art shows in Fig. 1 that the flared end is above the disk spring, and the load washer is below the disk spring).

With regards to claim 3, Brammer et al. teach a threadless knock sensor (fig. 1), comprising:

- a sleeve (2);
- a transducer (6) disposed around the sleeve (col. 1, lines 27-31);
- a load washer (4) disposed around the sleeve adjacent to the transducer;
- a frusto-conical disk spring (5 & 7) disposed around the sleeve adjacent to the load washer (col. 2, lines 57-59); and

a threadless means (flared end of sleeve 2, ring 9, and mass 8) for compressing the disk spring against the load washer (the prior art teaches that ring 9 can be attached to sleeve 2 by a threadless means, col. 2, lines 31-34, wherein ring 9 keeps mass 8 in place and thus compresses the disk spring against the load washer), wherein the threadless means comprises: a spring retention collar (9) press fitted around the sleeve (as shown in fig. 1 and suggested in col. 2, lines 31-34) above the load washer (4). The disk spring (7) compressed between the collar (9) and the load washer (4).

With regard to claims 4-10, said claims were unamended by the Applicant and thus the claims remain rejected for the reasons as stated in said previous office action.

With regard to claims 24 and 25, said claims were unamended by the Applicant and thus the claims remain rejected for the reasons as stated in said previous office action.

With regards to added claim 27, the disk spring (5 & 7) of the prior art is formed with a hole (fig. 3) and thus would inherently allow molten plastic (such as that used for the plastic housing, 1) to flow therethrough.

With regards to added claim 28, the disk spring (5 & 7) of the prior art defines an inner periphery (ie. inside edge of spring in fig. 3) formed with at least one slit therethrough (ie. hole in 15 of fig. 3).

With regards to added claim 29, fig. 2 of the prior art shows said slit angled with respect to vertical as claimed.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brammer et al. (6,279,381). Said claims were unamended by the Applicant and thus the claims remain rejected for the reasons as stated in said previous office action.

Response to Arguments

The Applicant's arguments have been considered but have not been found to be persuasive. First, the Applicant points out that element 8 of the prior art does not by itself compress the disk spring against the load washer, but instead it is said element in combination with element 9 which is fastened to sleeve 2.

The Examiner points out that it is obvious looking at fig 1 that element 8 does not by itself compress the disk spring but instead it is element 8 in combination with the elements that element 8 is in contact with and the elements which contact element 8. Furthermore, the rejection is based on one having ordinary skill in the art and one having ordinary skill in the art looking at fig. 1 of the applied prior art would clearly realize that element 8 works in connection with it's surrounding elements. For element 8 to work properly it must have it's surrounding elements. Element 8 by itself was pointed to by the Examiner in the original rejection for sake of simplicity and directing the Applicant's attention to the portion of the prior art's teaching in which the Examiner is relying upon.

Next, the Examiner comments on a statement made by the Applicant in the 3rd paragraph on page 7 of said amendment. The prior art specifically states in col. 2, lines 31-34 that ring (9) can be screwed on "or fastened in some other way" to sleeve (2). Thus, since the prior art is stating that fastening can be done by "some other way" when the specific way is screwing, then other well known common equivalents of fastening come into play. The prior art is not limited to only screw fastening element (9) to the sleeve (2).

Next, the Applicant has argued that the prior art fails to teach the flare as claimed because in the prior art, the sleeve (2) does not have a flare which contacts the spring (5/7). In response, the Examiner agrees with the Applicant in that the prior art's flare of the sleeve (2) does not "contact" the spring (5/7). However, the Examiner points out that the Applicant has never claimed such. The prior art teaches a flare on the upper end of sleeve (ie. the portion that "may" be threaded which is in direct contact with element 9) as clearly shown in fig. 1. From this flare, the disk spring is in compression "between" the flare and the load washer (4). The Applicant has never claimed that the spring is in "contact" with the flare but has only claimed that the spring is "between" the flare and the load washer and this is exactly what is taught by the prior art.

Finally with respect to the Applicant's arguments regarding claim 3, the Examiner has relied upon the prior art's suggestion in col. 2, lines 31-34 that element (9) can be fastened to sleeve (2) by "some other way" instead of screwing the two together. The Examiner contends that "press fitting" is a very well known way in the realm of one having ordinary skill in the art as an equivalent of screwing elements 9 and 2 together, and thus the prior art anticipates the Applicant's invention.

However, the Applicant has argued that press fitting is not suggested by the prior art because the prior art teaches "attaching" the elements together and to press fit elements together is not attaching two elements together. The Examiner disagrees. First, one has to understand the meaning of "press-fitting" to one having ordinary skill in the art. To press fit involves two objects having a very, very minimal tolerance therebetween and usually involves some specific

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equipment (ie. a press) to attach the objects. Thus, when two objects are "press-fit" (ie. a wheel bearing on an axle), they don't easily come apart. As such, when two objects are press-fit together, they are "attached" to one another. Especially, when the term "attached" is given it broadest reasonable meaning as allowed by the MPEP.

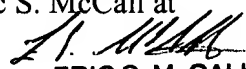
CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.


ERIC S. McCALL
PRIMARY EXAMINER
Oct. 17, 2003